ABSTRACT

A carbon substance comprises a structure and line-shaped bodies, the structure having a size ranging from about 1 μm to about 100 μm and including carbon and a metal or a metallic oxide, and the line-shaped bodies having diameters smaller than about 200 nm and including carbon as a main component thereof and growing radially from a surface of the structure. A method for manufacturing the carbon substance uses a thermal decomposition of a source gas containing carbon in the vicinity of a catalyst, wherein the catalyst comprises a first and a second materials, the first material being Ni or a Ni oxide and the second material being In or an In oxide; and the thermal decomposition is performed at a temperature ranging from about 675℃ to about 750℃. An electron emission element uses the carbon substance as an electron emission material. A composite material includes the carbon substance in its matrix.